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Extended Summaries 1st European Pesticide Residues Workshop Pesticides in Food and Drink

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Food Quality Control in Russia

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A basic requrement in any society is an adequate supply of safe wholesome food. As part of the EU Technical Assistance to Economic Reform and Recovery in the Commonwealth of Independent States (TACIS) programme, NI-CO (Northern Ireland Public Sector Enterprises Ltd) a company marketing the skills existing in the public sector in Northern Ireland, was awarded 1.1 million ECU for Project No. TACIS/91/FD072 which developed out of preliminary discussions between NI-CO and the town council of Pushchino in Russia, a small town approximately 120 km south of Moscow. The main result of these early collaborative links was the preparation of a realistic proposal, the objectives of which were to identify problems in the production, distribution and retail sale of food in the Pushchino area and to establish a fully equipped and operational Food Control Laboratory (FCL). Primarily the FCL would perform a range of analyses including those for pesticides, heavy metals, mycotoxins, radionuclides and food contaminant micro-organisms. In addition the FCL would act as a model capable of replication elsewhere in Russia and the Commonwealth of Independent States (CIS).

Food control naturally begins with food production. Pushchino was built in the 1960s overlooking the flood plain of the River Oka. This region is intensively cultivated and provides approximately 20% of the marketed vegetables (excluding potatoes) in the Moscow region. First, Pushchino is a science town (established in the 1960s as a centre of excellence in biological sciences as recognized by the Russian Academy of Science)[1] in the Serpukhov district of the Moscow region and as such is ideally suited to the creation of a FCL. Second, there were documented cases of pollution incidents involving heavy industries upstream of Pushchino and the local people were concerned about the possible contamination of crops grown in the area. The initial tasks of the authors were to identify a suitable site for the FCL, to determine the analyses and equipment required, to ensure that the FCL would complement existing arrangements rather than simply duplicate them and to recruit appropriately trained staff and develop a business plan that would enable the FCL to be financially viable. A site for the FCL (known as TESTSIP) was chosen at the Institute of Biochemistry and Physiology of Microorganisms. This site was chosen to allow the FCL to benefit from the established infrastructure associated with a major research institute of the Russian Academy of Sciences. Dr S. A. Khotimchenko, Head of the Laboratory of Food Toxicology, Institute of Nutrition of the Russian Academy of Medical Science, Moscow, asserted that a credible FCL should have five elements; pesticides, heavy metals, nitrate, mycotoxins and microbiology. The ability to analyse for a range of radionuclides should also be added to this list. Visits to several analytical laboratories, including research, municipal and private facilities, indicated that there was a wide range of capability in the region. However it was apparent that a lack of funding was hampering the sustained operation of much of the instrumentation. The need for food control legislation and its implementation is well recognized. For example, it was reported[2] in March 1994 that in the period 1991–1993 standards were not met in some 15% of dairy and fish products

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and 10% of meat products. These figures were twice as high in some regions such as Kaluga (which adjoins Moscow region). The main contaminants were heavy metals. Mycotoxins were found in almost 100% of the wheat samples analysed in the Krasnodar region in the south. Antibiotics (banned from use) were found in up to 25% of meat and poultry products.

Various laws exist in Russia to control the food supply, e.g. The Medical-Biological Requirements and Health Standards for Food and Processed-Food Ingredient Quality (1989), Protection of Customer Rights (766) and Goods and Services Certification (966). It was reported[3] in March 1994 that the creation of certification centres might be a profitable business based on the recently introduced laws concerning certification. The Russian system requires that a food processor or wholesaler obtains a certificate of analysis regarding the quality of the commodity offered for sale. This certificate is based on results provided by an accredited laboratory. The FCL would enable the more rigorous enforcement of food legislation by providing an analytical facility allowing food producers to obtain the necessary certification to market their produce.

The necessary equipment, glassware, chemicals, consumables, etc. to equip the laboratory and enable it to operate for one year were identified and supplied under the TACIS programme. TESTSIP was supplied with equipment to allow the analysis of the main groups of contaminants previously identified including automated gas chromatography for pesticides, automated atomic absorption spectroscopy for metals, automated high performance liquid chromatography for mycotoxins and an ion meter for nitrate/nitrite analysis. The Russian system for accrediting laboratories is described in the 'GOST Certification System Requirements to Testing Laboratories and Rules for their Accreditation' issued in 1992 and is based on ISO 25 and EN 4500 and therefore is broadly compatible with NAMAS accreditation. In order to facilitate the export of foodstuffs from Russia to the EU it is necessary to have internationally recognized quality standards applied within the agrifood industry. A comparison of analytical quality assurance in Russia and comparable schemes in the EU was carried out. The Russian system of certification for food analysis (GOST) is administered by the Rostest Laboratory in Moscow. It was an integral part of establishing the FCL that accreditation of the FCL under the GOST system would be obtained.

The FCL was opened in 1994 by the EU ambassador to Russia and is still operating successfully. One of the main lessons learnt, particularly by the consultants, is the impotence of food legislation both when food is not always in surplus and when there is not the means of determining compliance.[4]

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